

### **REMARKS**

Claims 1 and 16-34 are pending in the present application. Claim 1 is rejected. Claims 1, 17, 19, 20 and 29 are herein amended. Claim 16 is herein cancelled without prejudice. No new matter has been added.

### **Applicant's Response to Objections to the Specification**

The Office Action objects to the specification because it contains amino acid sequences that are not identified by SEQ ID NOs. Applicant respectfully defers action on this point until after the rejections based on 35 U.S.C. §§102 and 112 are withdrawn.

### **Claim Suggestion**

The Office Action indicates that it is preferable that the acronym MAST be in parenthesis instead of the full compound name being in parenthesis. Therefore, Applicant herein amends claim 1 to recite "styrene/maleic anhydride copolymer (MAST)" instead of "MAST (styrene/maleic anhydride copolymer)". Please see amended claim 1.

### **Applicant's Response to Claim Rejections under 35 U.S.C. §102**

**Claim 1 is rejected under 35 U.S.C. §102(e) as being anticipated by Frutos et al. (U.S. Patent Application Publication No. 2004/0043508) in light of Boone (U.S Patent Application Publication No. 2003/0099925).**

It is the position of the Office Action that Frutos discloses the embodiments as claimed. Frutos is directed at polymer-coated substrates for binding biological molecules. In paragraph [0042], Frutos refers to glass slides coated with  $\gamma$ -aminopropyl trimethoxysilane (GAPS) and then spin coated with “poly[styrene-co-maleic anhydride] (SMA).” It appears that this is the same compound as “styrene/maleic anhydride copolymer (MAST)”.

In response, Applicant herein amends claim 1 in order to recite “a substrate coated with styrene/maleic anhydride copolymer (MAST) to which a cell adhesion protein or peptide has been bound.” Applicant respectfully submits that Frutos does not disclose a cell adhesion protein or a peptide being bound to MAST (or SMA).

As for the glass slide of Frutos having a coating of poly[styrene-co-maleic anhydride] (SMA) disposed thereon, it is described that the glass slide is used for a method where an amine-added oligo DNA is bound to the glass slide and then hybridization method is performed. See paragraph [0044]. Specifically, the glass slide binds the oligo DNA by utilizing the nucleophilic reaction between COOH of the maleic acid of the poly[styrene-co-maleic anhydride] (SMA) and the amino group added to the oligo DNA. Such a method does not require a cell adhesion protein or peptide to be bound to SMA.

On the other hand, for the binding/adhesion of a substrate and cells in adherent-cell culture, physiological conditions have to be met which utilize the affinity between the receptor factor present on the cell surface and the adherent factor, peptide, etc. Unlike the claimed embodiments, the glass side of Frutos is not used for culturing adherent cells, and does not include a cell adhesion protein or peptide, and has no need for such a protein or peptide.

Frutos fails to disclose or suggest such a cell adhesion protein or peptide. Therefore, the glass slide of Frutos does not meet the requirements of claim 1. As recited in amended claim 1, a cell-adhesion protein or peptide is bound to MAST, and thus binding of the cells to the substrate via MAST is possible. As such, adherent-cell culture becomes possible through the binding between the receptor present on the cell surface and the cell-adhesion protein or peptide that has been bound to MAST. Therefore, Frutos does not teach “MAST to which a cell adhesion protein or peptide has been bound” as recited in amended claim 1. For at least the above reasons, Applicant respectfully submits that Frutos in light of Boone does not disclose or suggest the embodiments as claimed. Favorable reconsideration is respectfully requested.

For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

If the Examiner deems that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned attorney.

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Art Unit: 1651

Amendment  
Attorney Docket No. 053111

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,  
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